MAINE STREAM TEAM PROGRAM

Maine Stream Team Program NEWS

Networking, Education, and Stewardship

Volume 3 Issue 2 Summer/Fall 2003

MAINE STREAM SUMMIT 2003

Brunswick– On March 27, 2003, the Maine Stream Team Program co-hosted the first ever MainE Stream Summit (MESS) at Bowdoin College in Brunswick. This one day event brought together stream teams, school groups, watershed associations and interested citizens from around the state. Over 70 individuals attended.

The morning featured keynote speaker Don Sprangers from Washington Academy in East Machias and several of his students. They were the 2002 National Youth Watershed Summit first place winners. (See page 6 for more information.)

Ben Lubbers, Americorps at the DEP, talks to students at the Stream Summit about groundwater.

The morning was packed with dynamic presentations by school groups, such as the Saco Middle School Ecology Club's presentation on their water quality study of Goosefare Brook, and watershed associations, such as the Mount Desert Island Water Quality Coalition's watershed survey on Eddie Brook. In total, 10 different groups presented.

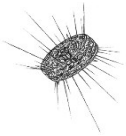
The day was filled with stories of dedicated individuals working to preserve streams, rivers and watersheds. Many participants commented on how inspired they were by the stream and river projects by teachers and students.

Lunch was followed by time to view poster displays and experiment with water monitoring equipment. The afternoon consisted of two workshop sessions which allowed participants a chance to break into smaller groups. Many workshops, such as *Macroinvertebrate Sampling & Identification,* were designed to give attendees hands-on experience. Other topics included *Basic Stream Ecology, Study Design Tips, Monitoring Physical Habitat and Channel Change Along Streams*, and the *Impacts of Urbanization on Two Southern Maine Streams*.

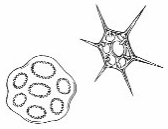
The Maine Stream Team Program hopes the Maine Stream Summit will become an annual event. Next year the summit may take place farther north, perhaps in Orono, to accommodate active groups in the Downeast and Northern regions.

Thank you to all who participated and we hope to see you next year!

INSIDE THIS ISSUE

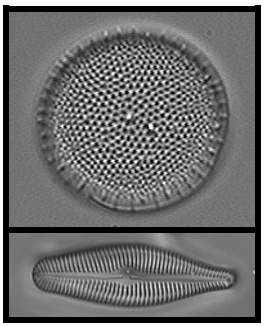


Critter Corner: Diatom Algae



Have you ever waded in a stream and stepped upon a seemingly harmless rock only to slip and have your feet fly out from underneath you? Microscopic plants, such as diatoms are most likely the culprit. Colonies of diatoms create a mucilaginous coating that makes rocks slippery. (This slippery coating also contains bacteria and fungi.) Most often identified as a brownish-yellow slime on stream cobbles, diatoms are ecologically important, fascinating and beautiful. Diatoms typically make up the bulk of the algae community in pristine streams and are found throughout the world in aquatic and semi-aquatic habitats such as lakes, ponds, ditches, rivers, oceans and estuaries. Interestingly, in marine environments they can exist within animals' digestive tracts, in their shells, and even on ice floes.

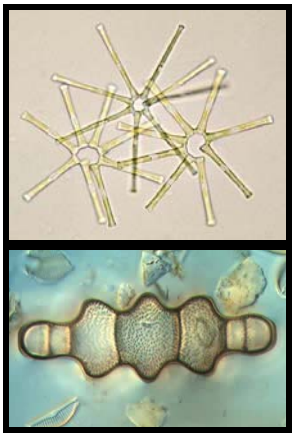
Diatoms are photosynthetic, unicellular, microscopic algae classified under the division *Bacillariophyta*. They are unique because of their construction. Composed of two halves, called *frustules,* they fit into each other like a pillbox or petri dish. Remarkably these cell walls are made of silica and look like glass. Each diatom species is characterized by the designs and patterns illustrated in their cell walls. Diatoms are divided into two groups based upon their symmetry. Diatoms are either symmetrical about a point (*centric, radial)* or about a line (*pennate*) (See figure at left). In freshwater, pennate diatoms are the most common and the best movers.



Top: Centric diatom; Bottom: Pennate diatom Images from http://www.calacademy.org/

There are over 5,000 species of diatoms; some species move and others don't. Diatoms either form in colonies on a substrate such as a rock, join together in chains, or exist as free-floating individuals. It is when these microscopic plants grow together in a large mass that they become visible to the naked eye.

Diatoms are of great ecological importance. One of the most common plants on earth, diatoms account for ¼ of the primary productivity on the planet (organisms that create the base of the food web through photosynthesis), ¼ of all the organic carbon fixation (converts carbon from carbon dioxide into organic compounds such as sugars), contribute a substantial amount of oxygen, and constitute 40% of the phytoplankton in the world. As a major energy source in some rivers and streams, they create the base of the food web (leaf litter also helps to form the base of the food web for many small, forested streams). Macroinvertebrates such as snails feed on these plants by using their file-like tongue to scrape up colonies of diatoms for a delicious meal. Saddlecase maker caddisflies graze on algae clinging to stones under the protection of their dome-shaped cases. In turn, fish feast on these macroinvertebrates and rely on them to make up a large part of their diet.



Images from http://www.microscopy-uk.org.uk/mag/wimsmall/smal1.html

Because diatoms make up the bulk of *periphyton* (benthic algae that grow attached to surfaces such as rocks or larger plants) communities in streams, they are being used as bio-indicators much like macroinvertebrates. They are sensitive to water quality changes and because of their global distribution they make ideal organisms to study. Diatoms are relatively stationary and therefore less able to avoid harmful conditions such as pollution.

Diatoms never cease to amaze. These prehistoric organisms first appeared 200,000 million years ago and flourished during the Mesozoic Era. Their population explosion during this era resulted in huge deposits, up to 3,000 feet thick of their silica shells. Today diatom fossil remains are marketed as diatomaceous earth, and are used by industries for insulation, filters and abrasives.

Cool diatom websites:

- http://www.microscopy-uk.org.uk/mag/wimsmall/smal1.html
- http://hjs.geol.uib.no/diatoms/index.html-ssi
- http://www.epa.gov/bioindicators/html/periphyton.html

References:

- http://www.microscopy-uk.org.uk/mag/wimsmall/smal1.html
- http://biology.usgs.gov/s+t/noframe/m2097.htm
- Cushing, C.E. and David Allan. 2001. Streams: Their Ecology and Life Academic Press, San Diego, CA.


Calendar Items


Do you have calendar items for us? Please contact us by September 10, 2003.

Androscoggin River "Source to the Sea" Canoe Trek: July 5 - July 25, 2003. Celebrate the eighth annual canoe trek of this river from its headwaters in northeastern New Hampshire to the tidewaters in the Gulf of Maine. Free and open to the public, the Trek celebrates the renaissance of this formerly polluted New England river, the 170-mile long waterway and its 3,450 square mile watershed. Most Trek participants join the moving river festival as a day trip, but a few hardy souls paddle the entire 21 days. For more information on the 2003 trek, contact Trek Coordintor Barbra Barrett, 207-527-2916, e-mail < barbrav@megalink.net >, or visit their website at < www.andro-watershed.org >.

Kayaking the Presumpscot with Maine Audubon: July 7, 2003. Gorham-Windham 8:30 AM-12:30 PM. Join Maine Audubon for a morning kayak trip to explore the quiet corners of the Presumpscot River as it flows through Windham and Gorham. Formerly an industrial river, the Presumpscot is now a vibrant part of greater Portland's natural environment and Sebago Lake's watershed. This gentle paddle will bring us through diverse habitat and hidden wild areas. We'll have a good chance of seeing waterfowl, raptor and warbler species. Kayaks, paddles and personal flotation devices included. Reservations necessary- $55/member, $65/nonmember (deduct $5 if you bring your own kayak) 207-781-2330 ext. 215, or e-mail <trips@maineaudubon.org.>

Camp Roads Maintenance Workshop: July 12, 8AM-3PM.
Come out for a thorough overview of simple tools to improve water quality in your special part of the world. The camp roads workshop series is designed to provide road commissions and landowners with techniques needed to reduce the polluted runoff from driveways, camp roads or local roadways. Even if you don't own a road, this workshop will help you identify erosion trouble spots in your watershed. Hosted by the Damariscotta Lake Watershed Association at the North Nobleboro Community Hall. $15 Registration fee (includes lunch and refreshments). Call 207-549-3836 for more information or e-mail <dlwa@lincoln.midcoast.com.>

Maine Rivers Conference: September 27 & 28, 2003. Location TBA. For more information visit <www.mainerivers.org>

2003-2004 Fluvial Geomorphology Short Courses: Augusta, ME by Field Geology Services.
Fluvial geomorphology is the science that assesses the shape and form of a watercourse (particularly streams & rivers) and the contributing physical processes. The introductory short courses will provide the background knowledge and skills for understanding a river's response to various natural and human alterations of watershed conditions such as glaciation, flooding, dam construction and removal, gravel mining, and urbanization. The advanced courses will train participants on the methods for recognizing unstable channel reaches in a watershed, determining the underlying cause of channel instability, and identifying the most sensible long term solutions. The course schedule, course descriptions, and registration form are available on the web at < www.field-geology.com/short_courses.htm >. Register prior to Labor Day (September 1st) and receive an additional $25 discount for each course and participant.

World Water Monitoring Day: October 18, 2003.
To commemorate the 30th anniversary of the Clean Water Act America's Clean Water Foundation established the first annual National Water Monitoring Day (NWMD) on October 18, 2002. Citizens were encouraged to take water samples from their local watersheds. America's Clean Water Foundation is continuing NWMD this year on the same date. For more information visit <www.yearofcleanwater.org>

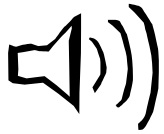
Stormwater Management in Cold Climates Conference: Planning, Design and Implementation: November 3 - 5, 2003. Holiday Inn By the Bay, Portland, Maine. For more information, visit their website at < www.cascobay.usm.maine.edu >

$$ Grant Opportunities $$

Funder	Region	Deadline	Phone	Web Site/*E-mail*
USGS Water Research Resources Institute	Maine	August 8	(207) 581-3244	www.umaine.eud/WaterResearch *UMGMC@maine.edu*
FishAmerica Foundation NOAA Community Restoration Program	Coastal States	August 11	(703) 519-9691	www.fishamerica.org *fishamerica@asafishing.org*
John Sage Foundation	Maine	August 15	(207) 722-3543	www.megrants.org/Johnsagefront.html *donjane@prexar.com*
Rivers, Trails, and Conservation Assistance Program	Maine	August 29	(207) 725-4934	<www.nps.gov/rtca> *burnham_martin@nps.gov*
Maine Outdoor Heritage Fund	Maine	September 1	(207) 688-4191	http://janus.state.me.us/ifw/outdoorheritage/ohf-howtoapply.htm *saffeir@rcn.com*
The Orchard Foundation	ME, NH, VT, MA, RI, CT and NY	September 1	(207) 799-0686	www.orchardfoundation.org *orchard@maine.rr.com*
New England Grassroots Environment Fund	CT, MA, ME, NH, RI, and VT	September 15	(802) 223-4622	www.grassrootsfund.org *info@grassrootsfund.org*
Haymarket People's Fund	CT, ME, NH, RI and VT	October 1	(617) 522-7676	www.haymarket.org *tommie@haymarket.org*
Sudbury Foundation	Gulf of ME	October 1	(978) 443-0849	www.sudburyfoundation.org *tanner@sudburyfoundation.org*
Tom's of Maine, Inc.	National (emphasis on ME)	November 1-February 1	(207) 985-3982	www.tomsofmaine.com/about/grants.asp
American Rivers	Northeast, mid-Atlantic, California	November 1	202-347-7550	www.amrivers.org/feature/restorationgrants.htm
Trout Unlimited	National	December	(703) 522-0200	www.tu.org *eas@tu.org*
Cottonwood Foundation	National	Revolving	(651) 426-8797	www.cottonwoodfdn.org/howapply.htm *cottonwood@igc.org*
Coastal Grants Program/ U.S. Fish & Wildlife Service	National	Revolving	(703) 358-2201	www.fws.gov/cep/coastweb.html

The U. S. Environmental Protection Agency has recently updated the Catalog of Federal Funding Sources for Watershed Protection. This searchable database is now available on-line at <www.epa.gov/watershedfunding.org>

Announcements



$$ WHAT THE HECK IS SWQPP? $$

Have you ever heard of the SWQPP? No, it's not the latest in floor cleaning products, and it's not some rare disease. It's the ***Surface Water Quality Protection Program*** at the ***Maine Department of Transportation*** (MDOT). As our name implies, we seek to protect and improve the quality of streams, rivers, lakes and coastal waters of the state by eliminating sources of erosion and sedimentation caused by state transportation related activities, like the use of roads. If your stream is affected by sedimentation from a state road, we may be able to help. Since 1998, we have spent about $1.5 million in federal funds to fix over 18 sites located throughout the state, and have plans to construct another 15. Several of our current projects involve stream resources. We have one project located in T31MD in Washington County, where the SWQPP is partnering in a stream bank restoration project on the Machias River. Another project is located in Cumberland and will address shoulder erosion and sedimentation of the East Branch of the Piscataqua River.

Since there are over 8,000 miles of state roads, we can't know of every problem site in every town. In order to address sites of most concern, ***the SWQPP relies on you.*** The site identification and nomination process is based on local participation and is open to any individual citizen, group, municipal, state or federal agency. Sites are evaluated with an objective 14-point criteria by a committee comprised of volunteers, staff from the Maine Department of Environmental Protection and MDOT. The committee then recommends worthy sites to the Program Manager, who in turn develops a project for that site from design to construction. For more information about how you can get involved, contact Alex Wong, SWQPP Manager, at 207-624-3080 or by email at <alex.wong@maine.gov.> Information and nomination packets are also available online at http://www.state.me.us/mdot/env/swqpp_homepage.htm.

MEDUXNEKEAG RIVER AWARDED GRANT FROM USEPA

The Meduxnekeag River is one of 20 watershed organizations nationwide selected to receive a $700,000 grant from the U. S. EPA's Watershed Initiative. With this funding, the Houlton Band of Maliseet Indians will be able to start many different projects including: implementing a cost-share program with potato farmers, identifying illicit sewer connections, and developing cost-share programs for removal of improper sewer connections. For more information, visit < www.epa.gov/owow/watershed/initiative >.

USGS ANNOUNCES ONLINE ACCESS TO NATIONWIDE FISH COMMUNITY DATA

Data on fish communities are now available for 960 stream sites in more than 50 major river basins across the nation. More than 1,900 fish community samples, collected from 1993 through 2002 by the National Water Quality Assessment (NAWQA) Program, a program under the U. S. Geological survey, can be downloaded from < water.usgs.gov/nawqa/data >. USGS fish community samples document the presence of all fish species and their relative abundance within designated stream reaches.

Washington Academy Award

The keynote speakers at the MainE Stream Summit (MESS) 2003 were Washington Academy students and their teacher Don Sprangers. This five-student environmental science team from East Machias received a first place award at the National Youth Watershed Summit last fall. The team beat out competitors from 49 other states at a national competition sponsored by America's Clean Water Foundation. The team, consisting of four high school seniors and one sophmore, won cash awards of $500 each.

The National Youth Watershed Summit

Don Sprangers speaks at the stream summit

consisted of 5 days of presentations and projects by student teams. Washington Academy presented their work on the Dennys River to restore endangered wild Maine Atlantic salmon habitat. Their projects on this river include; water monitoring, non-point source pollution surveys, macroinvertebrate sampling, bank restoration, and juvenile salmon release. Currently Washington Academy is constructing a wetland nursery to grow trees and plants. These wetland species will be used to restore riparian buffers on Atlantic salmon rivers in Washington County.

At the MESS, Washington Academy representatives shared their award winning video, poster display and experiences. Their talk bestowed a strong message of hope for the salmon rivers of Maine.

Recent Publications & Reports

1) "Impacts of Urbanization on Aquatic Systems" – Center For Watershed Protection
This report is a comprehensive examination of more than 225 multidisciplinary research studies documenting the impact of urbanization and the associated impervious cover on aquatic systems, including the many ways urbanization influences hydrologic, physical, water quality and biological indicators of aquatic health. The intended audience of "Impacts" includes watershed leaders, policy-makers, and agency staff. This report currently is available electronically from < www.cwp.org > for $25; a hard copy version is available for $30.

2) Watershed Conservation Strategies Developed for Seven Rivers in Southern Maine
The Wells National Estuarine Research Reserve has completed watershed conservation strategies for each of seven rivers in southern Maine - Spruce Creek, York River, Cape Neddick, Ogunquit River, Webhannet River, Little River (Wells/Kennebunk), and the Nonesuch. These documents provide a baseline of information on each river and about watershed protection, including 7 maps. People and organizations interested in obtaining a report can contact Heather True at < htrue@wellsnerrcec.lib.me.us > or visit < www.wellsreserve.org >.

Welcome New Stream Teams

#48	Camp Stream Team
#49	15 Mile Stream Team
#50	Otter Brook Stream Team
#51	Courageous Chihuahuas Stream Team
#52	Pump Box Brook Corridor Project Stream Team
#53	Stetson Brook Stream Team

MAINE STREAM SUMMIT PHOTOS

Attendees chat in front of the Presumpscot River Watch display

Macroinvertebrate Sampling & Identification workshop

Washington Academy award winning poster display

Thank you to the following businesses and colleges for their donations to the Stream Summit

Bowdoin College
University of Maine at Orono
(George Mitchell Center)
Wild Oats
Shaw's
Hannaford Bros.
Standard Baking Co.
Water Monitoring
Equipment & Supply
<www.watermonitoringequip.com>

Bill Townsend from Maine Rivers giving a morning presentation

Students try their hand at using water quality monitoring equipment

Morning presentation on Otter Brook

Maine Stream Team Program
c/o Maine DEP
312 Canco Road
Portland, Maine 04103

Return Service Requested

How Do I Join the MSTP?

It's easy! First, choose a stream or stream segment. Next, either obtain a "stream team registration form" by contacting us or filling out the online registration form. After registering, you will receive some helpful information and begin to receive our periodic newsletter to help you stay up-to-date.

Membership to the program is free to any interested citizen, family, or organization. Once you have a "Team" and a stream, you're set! You can determine your stream's values and problems and you can plan projects based on your assessments. You establish the course of events in protecting your stream. The Maine Stream Team Program can help you with ideas, advice, and informational materials.

Contact The Maine Stream Team Program (MSTP):

Mail: Maine Stream Team Program, c/o Maine DEP, 312 Canco Road, Portland, ME 04103
E-mail: mstp@maine.gov **Internet:** www.state.me.us/dep/blwq

Please note: our e-mail address has changed

Phone: (888)769-1036 (toll free – ask for the Maine Stream Team Program); (207)822-6317 [Jeff Varricchione, Portland, coordinator]; (207)822-6427 [MaryLee Haughwout, Portland]; (207) 287-7729 [Mary-Ellen Dennis, Augusta]; (207)941-4566 [Mark Whiting, Bangor]

Deadline for submitting calendar items, articles, or photos for the next newsletter is September 10, 2003 .

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